



Home-Processing Black and Green Tea (*Camellia sinensis*)

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A simplified, hand-processed, Japan-style black tea

Making black tea is a simple process. This type of tea is allowed to fully ferment before drying. *Camellia sinensis* cultivars high in tannins are most suitable for making black tea. Oxidizing enzymes change the chemical constituents in the tea leaves, and this results in brown- or red-colored brews. Assam hybrids such as 'Benihikari', 'Benihomare', and 'Bohea' make good black teas.

On a sunny afternoon, harvest young tea shoots that have two leaves and a central, needle-like leaf. Plan on starting with ½–1 lb of fresh tea shoots. Spread the shoots in a single layer on a screen or muslin cloth over a wire shelf rack in a relatively dry withering room with temperature between 68° and 77°F overnight for 16 hours. Weigh to determine that the tea is around 70 percent leaf moisture before proceeding to the next step. (Subtract the weight of the dried leaves from the weight of the fresh leaves, divide the result by the fresh leaf weight, and multiply the result by 100 to find the percent leaf moisture).

Gather the shoots into a ball in muslin cloth and hand-roll (knead) it for at least 10 minutes. Open the cloth and separate the tea. Repeat this process four times,

lightly kneading for 3–5 minutes each time. The temperature of the room for this process should be the same as for the withering. Using a washboard helps with the rolling. (Optional step: If two major leaf sizes exist, you may want to experiment with sorting the shoots into grades according to size. Roll and knead the larger shoots two more times. Ferment the two size classes in separate batches.)

Carefully separate the tea shoots from each other. Spread them in a tray until they are five or six shoot-layers deep in a fermenting room at 77–86°F with high humidity. Cover the rolled tea with a single layer of cheesecloth for about 3 hours. The tea will undergo an oxidation-fermentation process and change to a coppery color. Monitor the process for aroma and flavor qualities.

When the tea has darkened, stop this process by drying at 203°F for 5 minutes, followed by 140°F for approximately 60 minutes. Use a convection oven or a bamboo Chinese dryer with heating coils. Reduce leaf moisture content to about 5 percent. Get well accustomed to your drying unit. Calibrate it with a thermometer, and make necessary adjustments. Pack the cooled, dry tea in airtight aluminum bags or other containers for storage.



Hand-roll in muslin cloth on ribbed washboard



Black tea in a bamboo Chinese dryer

Hand-processed green tea using a microwave oven and wok

For making green tea, the least oxidized tea, you generally don't solar-wilt the freshly harvested tea, but you could allow a slight amount of indoor withering or expose the tea to diffused sunlight, depending on the type of tea you plan to make. Green tea keeps its color because oxidizing enzymes (i.e., polyphenol oxidase, peroxidase) that would turn the leaves dark are inactivated with heat, generally soon after harvest. Inactivated, the enzymes cannot break down the tea tissue chlorophyll, which contributes the green color. Sustaining adequate levels of soil nitrogen, especially ammonium, during shoot growth is more important for developing good flavor in tea processed as green tea (with its higher amino acids content) than as oolong or black tea.

On a sunny morning, harvest young tea shoots that have two leaves and a central, needle-like leaf. Plan on starting with ½–1 lb of fresh tea shoots. Microwave the tea shoots for approximately 2 minutes in an autoclavable plastic bag using level 5 (or a mid-range setting; we have been using a 1300-watt inverter microwave oven that has 10 power-level settings). The microwaved tea in the plastic bag will be hot, so be careful. Remove the cooked tea, separate the shoots, and spread them on a muslin cloth for about 3 minutes. The tea will look like



Pan-frying in a wok

cooked spinach. This step removes surface moisture and cools the leaves.

Gather the tea into a loose ball within the muslin cloth and roll it with light pressure for 1 or 2 minutes. Roll until the leaf and stem extract (the tea's "liquor") exudes. This process equalizes the moisture content of the batch as the tissue juices are slowly extracted. The tender shoots take on a sticky consistency. Carefully break apart the ball and separate the tea shoots from each other. This allows uniform moisture loss for each tea shoot prior to pan-frying.

Pan-fry the shoots in a wok over low heat, tossing them gently for about 1½ minutes until the surfaces of the leaves appear dry. Spread the tea on a muslin cloth to cool, separating the shoots again. Gather the tea into a ball in the muslin cloth and roll it again to the point where the leaf and stem juices begin to exude. Break apart the ball and separate the shoots. Pan-fry again while tossing for 5–6 minutes until the leaves appear dehydrated. It is important that during the pan-frying process the leaves are gradually dehydrated each time. This time can vary and will depend on the amount of fresh tea you begin with. Repeat the gathering, rolling, spreading and pan-frying of the shoots two more times. Increase pressure on the ball by using the base of your palms. Then slowly separate the tea shoots from each other. Eventually the tea leaves and stems should take on a slightly crispy texture.

Spread the tea evenly in a wok over very gentle heat for final drying until the stems are fully dried. Pack the cooled, dry tea in airtight aluminum bags or other containers for storage.



Finished green tea

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